Conducting empirical research in virtual worlds

Conference or Workshop Item

The Open University

Conducting empirical research in virtual worlds

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Aims of the tutorial

- Share experiences of conducting research in 3D virtual worlds
  - three research projects since 2008
  - two domains: e-learning and business-to-consumer (B2C) e-business
  - http://oro.open.ac.uk/view/person/sm577.html
- Researcher's toolbox
  - data collection and analysis techniques
  - ethical considerations
  - guidance notes for the research process
  - resources related to this tutorial

Techniques that we have employed

- Semi-structured or structured interviews
- User-observations and post-observation discussions
- Focus groups with and without images
- Panel discussions with images and prompts
- Tours followed by group discussions
- Longitudinal studies involving a combination of focus groups, email interviews, individual semi-structured interviews
- Heuristic evaluations or guideline inspections
  - exploratory walkthroughs
  - task-based walkthroughs

How have we recruited participants?

- Students, educators and designers in virtual worlds
  - interactions in ISTE tours, events
  - messages in in-world groups
  - via the SLED or SLRL list
  - emails, if real-world identities are known
  - recruitment of students via educators
- Shoppers and designers of stores
  - approaching them in stores, shopping malls

Our communication modes

- Conversations in text: text in IM; or group chat in IM; *output* is a transcript
- Giving a notecard with prompts and asking them to write their thoughts in the notecard
- User-observations where the user carries out a series of tasks which are listed on a notecard
  - think-aloud protocols when the user talks (to himself) while performing the tasks
- Voice: in Second Life or over Skype and recording the audio; requires transcription
- Questions and options in text: response to images or discussion points

interview

interview

focus group

group discussion aided by images

Techniques that we have employed for data analysis

- Descriptive phenomenology for narrative accounts
- Thematic or inductive analysis

  Thomas, D.R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data, American Journal of Evaluation, vol. 27, no. 2, pp. 237-246.
- Using frameworks such as definitions of concepts, e.g. usability and its constituents, efficiency, effectiveness and satisfaction
- Recording (counting) the options that the participants suggested

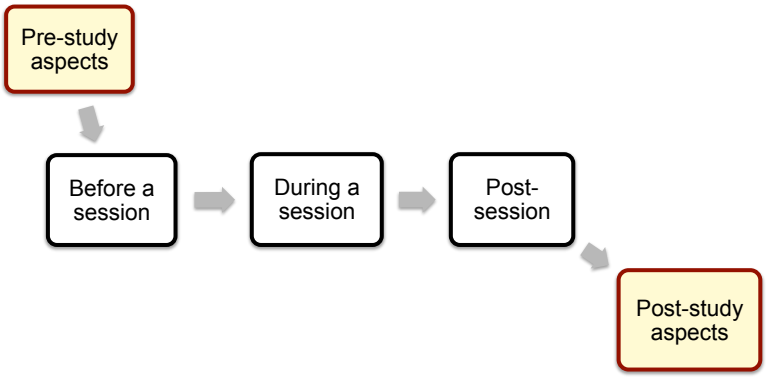
Ethical considerations

- Recruiting participants
- The consent process
  - project summary sheet
  - consent form
  - contact details of the project leader (including real-world information)
- Data collection and storage
- Retaining anonymity
- Approval of the research by the University's ethics committee
- Second Life images (snapshots)

Challenges

- international nature of the online medium
- anonymity of the medium demands greater investment of time to establish a mutually beneficial trust relationship
- the research process in a virtual world is influenced by codes of practice, etiquette, logistics, and ethical guidelines of conducting research in
  - real-world (offline) and online
- a virtual world researcher requires the skills and training of conducting both offline and online research

The Research Process



Research design

Pre-study aspects

- Research design
  - choice of data collection and analysis techniques
  - strategies for recruitment of participants
  - pre-study information from participants
    - do you need to know their real-life identities?
    - do you need their real-life demographic information?
  - ethical implications
    - which ethical guidelines will be followed?
    - guidelines which are virtual world specific
    - keeping aside sufficient time for the committee to review and approve the study
    - taking the initiative of explaining to the committee about a 3D virtual world environment

Preparations for in-world interactions

Pre-study aspects

- Developing communication and other in-world skills
  - creating notecards with landmarks
  - taking snapshots without the clicking sound
  - how to send inventory items to participants
  - choosing between instant messaging, voice
- Creating a researcher's identity
  - customising avatar: clothes, appearance
  - profile with real-world identity, research project
  - maintaining the same avatar throughout the study
- Participating in the community
  - learning about the in-world etiquette, norms
- Audio recording devices and familiarity using them

Recruitment strategy

Pre-study aspects

- Target participants: where to find them?
  - venues, events; restrictions by land owners; gatekeepers
  - in-world groups
  - mailing lists
  - recruiting them via a survey
- Profiles of the participants
  - their background and interests
  - whether they would like to participate
  - alternative ways of contacting them
- Incentives for participation
  - guidelines of the ethics committee
  - nature of the study
  - what is acceptable (L$ or real-world book tokens, for example?)

Data and handling

Pre-study aspects

- Components of the data?
  - transcript, audio-recording, pre-interview questionnaire, images
- Who will have access to the data?
- How will you anonymise the data?
- How will the data be stored?
  - password protected folders on the network drive
  - secure and encrypted USB drives; and taking backups
- For how long do you require the data?
- Any data analysis software that is required?
- Does the analysed data require validation by the participant?
- Are you expecting any follow-ups with the participants?

Logistics ahead of the session

Before a session

- Consent form and a project summary sheet
  - by notecard or via email
- Pre-interview questionnaire
  - background information about skills, experience, interests, choice of the viewer
- Arranging a time, location and mode of communication
- Choice of a location
  - permission to use the space
  - investigating access restrictions to a location
  - matching the design of the space with the nature of the session
- Interview templates or other research materials
  - hard and soft copies
  - text file for copying and pasting as an instant message (IM)

Checks before the session

Before a session

- Prepare a pre-session checklist
  - checking the recorder
  - choosing the viewer that matches with the participant's
  - checking the Skype connection
  - checking the location of the session
  - as per the stages of the session: a script for every stage
- Planning about data collection and storage
  - file of the transcript
- Planning the movement between locations if more than one venue is involved
- Arranging to speak to a colleague about your reflections
  - verbalising helps to view the session in 'hindsight'

The actual session

During a session

- Welcome/induction
  - reiterating the purpose of the session
  - mentioning the recording, images and re-seeking consent
- Going over to the meeting location (having a backup)
- Voice check or a Skype connection or an IM session
- In IM
  - Typing in 'End' to signify the end of an answer
  - using '…' to indicate that more thoughts are coming through
- Time: an hour at the most
  - 40-45 minutes main session
  - 10-15 minutes for de-briefing, reflection about the research as well as the process

Keeping the flow

During a session

- Maintaining the flow of the dialogue
  - by using short prompts, such as ‘interesting’, ‘I get it’, ‘can you tell me more’.
  - or using gestures such as nodding
  - avoid interrupting the participant while they are typing and giving participants time to think
  - whether or not to mimic the language and expression of the participant
- Making notes of what could be asked in the end to clarify
- Thanking the participant for their contribution
  - informing them what will happen next
- Reflecting on what should be changed in the next session

After the session

Post-session

- Data consolidation and storage
  - transcript (text) file, audio recording, notes during and after the session, snapshots
  - password protected folders on the network drive
  - secure and encrypted USB drives; and taking backups
- Thanking the participant in an IM or in an email

For the entire data

Post-study aspects

- Planning the data analysis
  - working with the copy of the transcript or transcribed notes
  - choice of a data analysis software
  - highlighting or colour coding for thematic analysis (in Excel)
  - relating the images with the data
- Dissemination
  - does the analysis have to be validated by the participants?
  - format and nature of the feedback, if the participant has requested for it

Some key messages

- recruiting with care
- operating in an ethical and scholarly way
- following the codes of conduct
- realising that there is a person behind the avatar
- conducting pilot sessions
- trade-offs between using software for data analysis and delving in raw data and hand-coding it

"The internet or the virtual world does not inherently transform the accepted protocols.

The technology connects people to people via a network, and therefore we must be sensitive to the rights of the participants behind the connections"

Resources that might be useful

- notecard examples (in-world research materials)
- sample consent form
- sample project summary sheet
- researcher checklist for a user-based session
- online resources related to ethics
- annotated bibliography
- our paper that appeared in Journal of Virtual Worlds Research

Contributions are from colleagues Christopher Hardy, Ahmad Reeves and Minh Tran